1. An apparatus to synthesize modulation waveforms, the apparatus comprising:

an error input line configured to carry an error signal;

a shift input line configured to carry a first shift signal;

an output line configured to carry a modulation waveform to a destination device;

an integration unit configured to receive and integrate the error signal and provide an integrated error signal;

a summing unit configured to sum the first shift signal with the integrated error signal and provide a total shift signal; and

a waveform generator configured to receive a total shift signal and provide a modulation waveform characterized by a frequency proportional to the total shift signal.

2. The apparatus of claim 1, wherein the first shift signal is data keyed.

3. The apparatus of claim 2, wherein the data keying comprises frequency shift keying.

4. The apparatus of claim 2, wherein the data keying comprises frequency domain orthogonal codes.

5. The apparatus of claim 4, wherein the frequency domain orthogonal codes comprise Walsh codes.

6. The apparatus of claim 1, further configured for data keying, the apparatus further comprising:

a data input line configured to carry a data signal;

the waveform generator further configured to pre-modulate the modulation waveform in accordance with the data signal to provide a modulation waveform that is data keyed.

7. The apparatus of claim 6, wherein the data signal comprises orthogonal codes.

8. The apparatus of claim 7, wherein the orthogonal codes comprise Walsh codes.

9. The apparatus of claim 1, wherein the modulation waveform is a quadrature waveform comprising first and second waveform components substantially 90 degrees out of phase.

10. The apparatus of claim 9, wherein the first and second waveform components are substantially trianglar in shape.

11. The apparatus of claim 9, wherein the first and second waveform components are substantially sawtooth in shape.

12. The apparatus of claim 1 further configured for ON/OFF data keying, the apparatus further comprising:

a data input line configured to carry a binary data signal representing ON and OFF positions;

the destination device having a dark point;

the waveform generator further configured to receive a binary data signal and provide the modulation waveform corresponding to the dark point of the destination device when the binary data signal is in the OFF position.

13. The apparatus of claim 1, configured for frequency shift keying, wherein:

the shift input line is further configured to carry a second shift signal;

the apparatus further comprises,

a data input line configured to carry a binary data signal representing first and second positions, and

a multiplexor configured receive the binary data signal and multiplex between the first and second shift signals to provide a data keyed shift signal wherein the first shift signal corresponds to the first position and the second shift signal corresponds to the first position; and

the summing unit is configured to sum the data keyed shift signal and the integrated error signal to provide a total shift signal.

14. The apparatus of claim 1, wherein the modulation waveform is substantially triangular in shape.

15. The apparatus of claim 1, wherein the modulation waveform is substantially sawtooth in shape.

16. The apparatus of claim 1, wherein the first shift signal comprises a spreading function.

17. The apparatus of claim 1, wherein the first shift signal comprises a gathering function.

18. The apparatus of claim 1, wherein the first shift signal comprises the difference between two spreading functions.